

WHAT IS CLAIMED IS:

1. A landfill gas extraction system, comprising:
at least one fan module configured for communicating with methane in the landfill;

5 at least one fan disposed in the fan module to extract methane out of the landfill when the fan module is engaged with a landfill well of the landfill and the fan is activated;

at least one battery for powering the fan; and

10 at least one solar panel electrically connected to the battery to recharge the battery.

2. The system of Claim 1, wherein the fan is a DC-powered fan.

3. The system of Claim 2, wherein the fan is an axial fan.

4. The system of Claim 1, wherein the fan module includes a fan pipe holding the fan and first and second flanges engaged with opposite ends of the fan pipe for mating
15 with respective flanges of a landfill well.

5. The system of Claim 4, further comprising at least one support rod extending through at least two flanges.

6. The system of Claim 1, wherein the battery is a rechargeable lead acid twelve volt battery.

5 7. The system of Claim 1, wherein the solar panel includes an array of solar cells for converting sunlight to electricity.

8. The system of Claim 1, further comprising a voltage controller electrically disposed between the battery and solar panel to maintain a predetermined voltage to the battery.

10 9. A method for extracting gas from a landfill well, comprising:
installing a fan module in the well, the fan module containing at least one DC-powered fan;
energizing the fan using at least one battery to cause fluid to be exhausted from the well; and
15 recharging the battery using at least one solar cell.

10. The method of Claim 9, further comprising securing engagement of the fan module with the landfill well using at least one support rod.

11. The method of Claim 9, wherein the battery is a twelve volt lead acid battery, and is the sole source of power for the fan.

12. The method of Claim 9, wherein the fan is an axial fan.

13. The method of Claim 9, comprising exhausting gas from the well at a rate of
5 about forty standard cubic feet per minute or greater.

14. The method of Claim 9, comprising maintaining twelve volts DC to the battery.

15. A modular landfill gas extraction system, comprising:

fan means in fluid communication with at least one landfill well for exhausting
gas therefrom;

10 battery means for powering the fan means; and

solar power means for recharging the battery means.

16. The system of Claim 15, wherein the fan means includes at least one DC-
powered fan disposed in a fan module, the battery means includes a lead acid battery, and
the solar power means includes at least one solar panel.

15 17. The system of Claim 16, wherein the fan is an axial fan.

18. The system of Claim 16, wherein the fan module includes a fan pipe holding the fan and first and second flanges engaged with opposite ends of the fan pipe for mating with respective flanges of the landfill well.

5 19. The system of Claim 18, further comprising at least one support rod extending through at least two flanges to securely hold the fan module in engagement with the landfill well.

20. The system of Claim 16, further comprising voltage control means electrically disposed between the battery and solar panel for maintaining twelve volts to the battery.